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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:

Confirmation No.: 3037

Jyotirmoy Paul, et al.

Examiner: Kenny S. Lin

Serial No.: 09/872,978

Group Art Unit No.: 2154

Filed on: May 31, 2001

For: TECHNIQUES FOR PROGRAMMING
EVENT-DRIVEN TRANSACTIONS IN
MOBILE APPLICATIONS

MS Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed on July 7, 2005.

I. REAL PARTY IN INTEREST

Oracle International Corporation is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

U.S. Patent Application Serial No. 09/872,066 and U.S. Patent Application Serial No. 09/631,884 are related to the present application and are currently under appeal

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before the Board of Patent Appeals and Interferences. The Board has not yet handed down any decisions regarding these other applications.

III. STATUS OF CLAIMS

Claims 1-66 are pending in this application, have been finally rejected, and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendments were filed after the Office Action mailed on April 7, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present application contains independent Claims 1, 27, 34, and 60.

Claim 1 recites (with added reference annotations in parenthesis) a method of interacting with a client process (FIG 1A, client 103) on a mobile device (FIG 1A, mobile/hand-held device 101) connected to a network (FIG. 1A, network 108) over a wireless link (FIG. 1A, wireless link 106), the method comprising the steps of:

receiving (FIG. 2C, steps 221 and 222) at a mobile interactions server (FIG. 1A, mobile interactions server 150a) a first message from the client process indicating a first action (page 42, lines 25-27) by a user of the mobile device, the first action related (page 17, lines 20-24) to a first graphical element (FIG. 2B, input text field 278b) displayed on the device for requesting a service (page 2, lines 8-20) from an application (FIG. 1A, application 116A);

based on the first message, determining (FIG. 2C, step 224) whether the action is associated with an event type of a plurality of predetermined event types (page 44, lines 4-14);

if it is determined the action is not associated with the event type (page 44, lines 20-21), then, without invoking any method of the application (page 44, lines 25-27), generating (FIG. 2C, steps 226 and 228), first data describing any change in the first graphical element (page 44, line 27 to page 45, line 16); and sending (page 13, lines 10-11) the first data to the client process for changing the display of the first graphical element.

Claim 27 recites (with added reference annotations in parenthesis) a method of interacting with a client process (FIG 1A, client 103) on a mobile device (FIG 1A, mobile/hand-held device 101) connected to a network (FIG. 1A, network 108) over a wireless link (FIG. 1A, wireless link 106), the method comprising the steps of:

 sending from an application (FIG. 1A, application 116A) to a mobile interactions server (FIG. 1A, mobile interactions server 150a) first data (FIG. 1B, mobile applications bean 180) describing a first graphical element (FIG. 1B, attributes and values 184; page 21, lines 12-16) for display on the mobile device and one or more event handling methods (FIG. 1B, method 188; page 21, lines 22-24) of the application (page 59, lines 21-23) associated with the first graphical element;

 receiving (page 47, lines 15-17; page 74, lines 25-26) at a particular event handling method of the plurality of event handling methods second data describing an event having a particular event type of a plurality of predetermined event types in response to an action by a user of the mobile device (page 60, lines 7-23; page 74, lines 20-23); and

 providing a service (page 2, lines 8-20) for the client process in response to receiving the second data, wherein the particular event handling method is associated

with the particular event type, and the action is determined by the mobile interactions server to be associated with the particular event type (page 60, lines 7-23; page 74, lines 20-23).

Claims 34 and 60 recite computer readable media that carry instructions for causing processors to perform the steps of the methods of Claims 1 and 27, respectively.

The dependent claims are not argued separately from the independent claims upon which they depend.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-8, 22, 25, 34-41, 55, and 58 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,473,609 to Schwartz et al. (“Schwartz”).

2. Claims 27 and 60 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Schwartz.

3. Claims 9-19, 26, 42-52 and 59 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Schwartz in view of “Official Notice.”

4. Claims 20, 21, 23, 24, 28, 53, 54, 56, 57, and 61 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over Schwartz in view U.S. Patent No. 6,279,121 to Gamo (“Gamo”).

5. Claims 29-33 and 62-66 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over Schwartz in view of Gamo and “Official Notice.”

VIII. ARGUMENTS

A. The Limitations of Claims 1-8, 22, 25, 34-41, 55, and 58 Are Not in Any Way Taught or Suggested by Schwartz

Claim 1 requires, *inter alia*, “based on the first message, **determining whether the action is associated with an event type of a plurality of predetermined event types.”**

The Examiner alleges that Schwartz discloses this feature at col. 13, lines 29-31. These lines indicate that a link server receives a request from a mobile device and interprets the request, which may be a request to display a next card in an HDML deck. However, these lines do not teach or suggest that the link server determines whether the request is associated with a particular event type, of a plurality of predetermined event types. Schwartz says nothing about a plurality of predetermined event types or making a determination such as the one recited in Claim 1.

The Examiner apparently correlates Schwartz’ link server with the “mobile interactions server” recited in Claim 1, and Schwartz’ network server (or “service server”) with the application recited in Claim 1. In column 13, Schwartz discloses that, in response to the selection of a soft key such as an “OK” button displayed on a mobile device, the link server may retrieve the next card in the HDML deck and deliver the card to a mobile device. In column 14, Schwartz discloses that, in response to the selection on the mobile device of a request that includes a resource locator, the link server may send a request to the network server. The Examiner apparently reasons as follows: The selection of the soft key might result in the link server responding to the mobile device without contacting the network server, while the selection of the resource locator might result in

the link server contacting the network server. Therefore, the Examiner apparently reasons, there are inherently two different “event types”—one type that corresponds to selections of soft keys, and one type that corresponds to selections of resource locators.

However, Schwartz never expressly states that such types exist. In fact, according to Schwartz, whether or not the link server contacts the network server in response to a request has nothing to do with whether the request corresponds to the selection of a soft key or the selection of a resource locator. In actuality, whether or not the link server contacts the network server apparently depends only on whether the content that is the target of the request has already been cached at the link server—regardless of whether the request corresponds to the selection of a soft key or a resource locator. Therefore, Schwartz does not teach or suggest separate “event types.”

A closer examination of Schwartz shows this to be the case. In col. 13, lines 32-36, Schwartz states:

Control engine 609 calls converter 612 to retrieve the next card from the received HDML deck, **preferably, cached in a memory in the link server** and converts the card in HDML to a SDD file that is subsequently delivered to mobile device 602.

It is apparent from the above text that it is only “preferable” for the next card to be obtained from the link server rather than the network device. The next card is only obtained from the link server if the next card is already cached at the link server.

Presumably, if the next card is not cached at the link server, then the link server must contact the network device in order to obtain the next card.

Similarly, in col. 14, lines 18-22, Schwartz states:

This request may include a resource locator to another card in the deck cached in link server 606 or a remote object in service server 604,

depending on whether the original received HDML includes the information requested by the new request from mobile device 602.

It appears, from these lines, that the link server does not contact the network server if the requested information is already cached at the link server, even if the request includes a resource locator.

The above passages of Schwartz make it clear that it is whether the requested content has already been cached at the link server, and **not** whether the request is of a particular “type,” that serves as the basis for whether the link server must contact the network server in order to satisfy the request. In both the “selection of a soft key” and the “selection of a resource locator” cases, the link server may either provide content cached at the link server, or provide content obtained from the network server in response to the request; it does not matter whether a soft key or a resource locator was selected at the mobile device. The link server apparently treats requests that result from selections of soft keys in the same way that the link server treats requests that result from selections of resource locators. There is no outcome-determinative “request type” distinction in Schwartz.

The Examiner asserted that Schwartz inherently teaches the determining of whether an action is associated with an event type. In support of this assertion, the Examiner alleges, in the “Response to Arguments,” that Schwartz discloses event types at col. 19, lines 32-44. Some of the alleged event types described in this section are “Softkey,” “AlertSelect,” “Accept,” “GotoURL,” and “DeleteSelect.” The Examiner asserts that different event types are needed to retrieve different types of HDML cards,

the types of HDML cards being “display,” “choice,” “entry,” and “no-display” cards (col. 11, line 65, through col. 12, line 14).

This is not accurate, however. According to Schwartz, different event types are NOT needed to retrieve different types of HDML cards. For example, in response to an occurrence of an event of the “Softkey” event type, any type of HDML card may be retrieved: a “display” type card, a “choice” type card, an “entry” type card, or a “no-display” type card. There is no event type other than “Softkey” that is needed to retrieve any of these types of HDML cards.

There are also other aspects of Claim 1 that Schwartz fails to teach or suggest. According to Claim 1, if an action **is not associated** with one of a plurality of predetermined event types, then data describing a change to a graphical element is generated and sent to a client process. The alleged event types of Schwartz are “Softkey,” “AlertSelect,” “Accept,” “GotoURL,” and “DeleteSelect,” according to the Examiner’s rationale in the “Response to Arguments.”

The Examiner alleges that Schwartz discloses Claim 1’s feature, “if it is determined that the action **is not associated with the event type, then . . .** generating first data describing any change in the first graphical element, and sending the first data to the client process . . .” at col. 13, lines 29-38. These lines of Schwartz describe what happens when a user selects a soft key (col. 13, lines 25-29). “Softkey” is one of the alleged event types. Apparently, when a user selects a soft key, it generates a “Softkey” event (“for example, Softkey meaning a soft key activation,” col. 19, lines 34-35). Thus, it appears that the operations described at col. 13, lines 29-38 are performed if an action

is associated with an event type in the alleged plurality of predetermined event types (“Softkey”), rather than if the action is **not** so associated.

Furthermore, Claim 1 recites that if the action **is not associated** with one of the plurality of predetermined event types, then certain steps are performed **without invoking any method of the application**. In contrast, Claim 2 recites that if the action **is associated** with one of the plurality of predetermined event types, then **a method of the application is invoked**. The Examiner alleges that Schwartz discloses Claim 2’s feature, “**invoking a particular event handling method of the application to provide the service**,” at col. 14, lines 18-58.

There is no mention of any “method” of an “application” being invoked in this section. This section describes certain operations being performed in response to either a user’s selection of an “OK” soft key or a user’s selection of a numbered key (col. 14, lines 10-16). There appears to be no significant difference between the operations disclosed in this section and the operations disclosed in col. 13, lines 29-38, which the Examiner cited in the rejection of Claim 1. In both of these cited sections of Schwartz, the operations comprise a request being sent from mobile device 602 to link server 606, and “next screen display” information being sent from link server 606 to mobile device 602. “Next screen display” is in both col. 13, line 32, used in the rejection of Claim 1, and col. 14, line 16, used in the rejection of Claim 2.

Therefore, it is puzzling how the Examiner can say that in one case, operations are performed **without invoking any method of the application**, but in the other case, the operations include **invoking a method of the application**. There is no difference in the actions, and there is no difference in the operations performed in response to the actions.

In the case of Claim 1, the Examiner appears to be saying that the user's selection of a graphical element is an action that **is not** associated with any of the plurality of predetermined event types, but in the case of Claim 2, the Examiner appears to be saying that the user's selection of a graphical element is an action that **is** associated with one of the plurality of predetermined event types. In the case of Claim 1, the Examiner appears to be saying that sending "next screen display" information from link server 606 to mobile device 602 is performed **without invoking any method of an application**, but in the case of Claim 2, the Examiner appears to be saying that sending "next screen display" information from link server 606 to mobile device 602 involves **invoking a method of the application** (although it still is indeterminable what, in Schwartz, the Examiner means to analogize to the "method of the application" recited in Claim 2). The rejections of Claims 1 and 2 are inconsistent, and therefore, at least one or the other rejection cannot be maintained.

Thus, there exist several features of Claim 1 that Schwartz does not teach or suggest. For at least the reasons discussed above, it is respectfully submitted that Claim 1 is patentable over Schwartz.

By virtue of their dependence from Claim 1, Claims 2-8, 22, and 25 include the features of Claim 1 distinguished from Schwartz above. Therefore, it is respectfully submitted that Claims 2-8, 22, and 25 are patentable over Schwartz for at least the reasons discussed above in relation to Claim 1.

Claims 34-41, 55, and 58 recite computer-readable media that carry instructions for performing the steps of the methods of Claims 1-8, 22, and 25, respectively.

Therefore, it is respectfully submitted that Claims 34-41, 55, and 58 are patentable over Schwartz for at least the reasons discussed above in relation to Claims 1-8, 22, and 25.

B. The Limitations of Claims 27 and 60 Are Not in Any Way Taught or Suggested by Schwartz

Claim 27 requires, *inter alia*, “**sending from an application** to a mobile interactions server . . . one or more **event handling methods** of the application associated with the first graphical element.”

The Examiner alleges that Schwartz discloses this feature at col. 12, lines 48-67. These lines indicate that a control engine in a link server performs tasks that require computing resources. These lines also list some of the typical functions that the control engine performs. The Examiner apparently correlates these functions with the “event handling methods” required by Claim 27.

However, even assuming, *arguendo*, that these functions are the same as the “event handling methods” required by Claim 27, Schwartz still fails to teach or suggest that these functions are sent to the link server from an application. The Examiner appears to correlate the “application” required by Claim 27 with the network server (or “service server”) disclosed by Schwartz. However, Schwartz fails to teach or suggest that the network server sends the functions to the link server. Thus, Schwartz fails to teach or suggest, “**sending from an application** to a mobile interactions server . . . one or more **event handling methods** of the application associated with the first graphical element” as required by Claim 27.

Claim 27 also requires, *inter alia*, “sending from an application to a mobile interactions server first data describing a first graphical element for display on the mobile device.”

The Examiner alleges that the “application” of Claim 27 is analogous to the “browser” that Schwartz discloses at col. 12, lines 15-18. It should be noted that this “browser” clearly resides on mobile device 602. The Examiner apparently analogizes the “mobile interactions server” of Claim 27 to Schwartz’s link server 606, and the “mobile device” of Claim 27 to Schwartz’s mobile device 602. Therefore, if Schwartz does not disclose that the browser sends, to link server 606, data that describes a graphical element for display on mobile device 602, then Schwartz does not teach or suggest the method of Claim 27.

There are several sections of Schwartz that the Examiner cites as disclosing, allegedly, the above feature of Claim 27. First of these sections is col. 8, lines 48-62. This section discusses messages that are communicated between various entities, but does not indicate that any such messages are sent from a browser, which the Examiner analogized to Claim 27’s “application,” or that any such messages describe a graphical element for display on a mobile device.

Second of these sections is col. 11, lines 65-67. This section indicates that there are different types of display cards. Even if these display cards contain information for describing a graphical element on a mobile device, this section does not indicate that any of these display cards are sent from a browser to link server 606—the apparent alleged “mobile interactions server.”

Third of these sections is col. 12, lines 1-14. This section merely describes in greater detail what each type of display card may contain. Like the previously discussed section, this section does not indicate that any of these display cards are sent from a browser to link server 606—the apparent alleged “mobile interactions server.”

Fourth and last of these sections is col. 13, lines 1-3. This section states the obvious, that a display screen on mobile device 602 can display a graphical image. This does not in any way infer that the browser, which clearly resides on mobile device 602, sends any graphical image-describing data to link server 606—the apparent alleged “mobile interactions server.”

Thus, none of the cited sections of Schwartz teaches or suggests, “**sending from an application to a mobile interactions server first data describing a first graphical element for display on the mobile device**” as required by Claim 27.

Thus, there exist several features of Claim 27 that Schwartz does not teach or suggest. For at least the reasons discussed above, it is respectfully submitted that Claim 27 is patentable over Schwartz.

Claim 60 recites a computer-readable medium that carries instructions for performing the steps of the method of Claim 27. Therefore, it is respectfully submitted that Claim 60 is patentable over Schwartz for at least the reasons discussed above in relation to Claim 27.

C. The Limitations of Claims 9-19, 26, 42-52 and 59 Are Not in Any Way Taught or Suggested by Schwartz and “Official Notice”

Claims 9-19 and 26 depend from Claim 1 and therefore include the features of Claim 1 that are distinguished from Schwartz above. Although “Official Notice” was taken in the rejections of Claims 9-19 and 26, the “Official Notice” did not allege that the features of Claim 1 distinguished from Schwartz above are common knowledge or well known in the art. Therefore, for at least the reasons discussed above, it is respectfully submitted that Claims 9-19 and 26 are patentable over Schwartz and the “Official Notice.”

Claims 42-52 and 59 recite computer-readable media that carry instructions for performing the steps of the methods of Claims 9-19 and 26, respectively. Therefore, it is respectfully submitted that Claims 42-52 and 59 are patentable over Schwartz and the “Official Notice” for at least the reasons discussed above in relation to Claims 9-19 and 26.

D. The Limitations of Claims 20, 21, 23, 24, 28, 53, 54, 56, 57, and 61 Are Not in Any Way Taught or Suggested by Schwartz and Gamo

Claims 20, 21, 23, 24, and 28 depend from either Claim 1 or Claim 27 and therefore include either the features of Claim 1 or Claim 27 that are distinguished from Schwartz above. Gamo also does not teach or suggest these features. Indeed, the Examiner does not even allege that Gamo teaches or suggests these features. For at least the reasons discussed above, it is respectfully submitted that Claims 20, 21, 23, 24, and 28 are patentable over Schwartz and Gamo.

Claims 53, 54, 56, 57, and 61 recite computer-readable media that carry instructions for performing the steps of the methods of Claims 20, 21, 23, 24, and 28, respectively. Therefore, it is respectfully submitted that Claims 53, 54, 56, 57, and 61 are patentable over Schwartz and Gamo for at least the reasons discussed above in relation to Claims 20, 21, 23, 24, and 28.

E. The Limitations of Claims 29-33 and 62-66 Are Not in Any Way Taught or Suggested by Schwartz, Gamo, and “Official Notice”

Claims 29-33 depend from Claim 27 and therefore include the features of Claim 27 that are distinguished from Schwartz above. Gamo also does not teach or suggest these features. Indeed, the Examiner does not even allege that Gamo teaches or suggests these features. Although “Official Notice” was taken in the rejections of Claims 29-33, the “Official Notice” did not allege that the features of Claim 27 distinguished from Schwartz above are common knowledge or well known in the art. For at least the reasons discussed above, it is respectfully submitted that Claims 29-33 are patentable over Schwartz, Gamo, and the “Official Notice.”

Claims 62-66 recite computer-readable media that carry instructions for performing the steps of the methods of Claims 29-33, respectively. Therefore, it is respectfully submitted that Claims 62-66 are patentable over Schwartz, Gamo, and the “Official Notice” for at least the reasons discussed above in relation to Claims 29-33.

IX. CONCLUSION AND PRAYER FOR RELIEF

Based on the foregoing, it is respectfully submitted that the rejections of Claims 1-66 lack the requisite factual and legal bases. It is therefore respectfully requested that the Honorable Board reverse the rejections of Claims 1-66.

Respectfully submitted,

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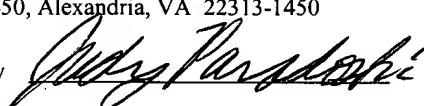
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by



CLAIMS APPENDIX

- 1 1. A method of interacting with a client process on a mobile device connected to a
- 2 network over a wireless link, the method comprising the steps of:
 - 3 receiving at a mobile interactions server a first message from the client process
 - 4 indicating a first action by a user of the mobile device, the first action related
 - 5 to a first graphical element displayed on the device for requesting a service
 - 6 from an application;
 - 7 based on the first message, determining whether the action is associated with an event
 - 8 type of a plurality of predetermined event types;
 - 9 if it is determined the action is not associated with the event type, then, without
 - 10 invoking any method of the application,
 - 11 generating first data describing any change in the first graphical element; and
 - 12 sending the first data to the client process for changing the display of the first
 - 13 graphical element.
- 1 2. The method of Claim 1, further comprising, if it is determined the action is associated
- 2 with the event type, then performing the steps of:
 - 3 generating second data describing a particular event of the event type;
 - 4 invoking a particular event handling method of the application to provide the service,
 - 5 the particular event handling method associated with the event type; and
 - 6 passing the second data to the event handling method.

- 1 3. The method of Claim 1, further comprising, before said step of receiving the first
- 2 message, the steps of:
 - 3 receiving second data from the application describing the first graphical element and
 - 4 indicating one or more event handling methods associated with the first
 - 5 graphical element; and
 - 6 passing the second data to the client process for displaying the first graphical element.
- 1 4. The method of Claim 3, wherein each of the one or more event handling methods is
- 2 associated with one event type of the plurality of predetermined event types.
- 1 5. The method of Claim 2, wherein the particular event handling method is associated
- 2 with one event type of the plurality of predetermined event types.
- 1 6. The method of Claim 5, wherein a name of the particular event handling method
- 2 indicates the one event type with which it is associated.
- 1 7. The method of Claim 2, wherein the particular event handling method is associated
- 2 with the first graphical element.
- 1 8. The method of Claim 1, wherein the plurality of predetermined events types does not
- 2 include an event type associated with the user of the mobile device pressing a character key.

1 9. The method of Claim 1, wherein the plurality of predetermined event types includes
2 an exit-graphical-element event type and an enter-graphical-element event type.

1 10. The method of Claim 9, said step of determining whether the action is associated with
2 an event type further comprising:

3 determining whether the first message indicates the first action corresponds to one of
4 moving a cursor from the first graphical element and pressing an enter key;

5 and

6 if the first action does correspond to one of moving the cursor from the first graphical
7 element and pressing the enter key, then the first action is associated with the
8 exit-graphical-element event type.

1 11. The method of Claim 9, said step of determining whether the action is associated with
2 an event type further comprising:

3 determining whether the first message indicates the first action corresponds to moving
4 a cursor onto the first graphical element; and

5 if the first action does correspond to moving the cursor onto the first graphical
6 element, then the first action is associated with the enter-graphical-element
7 event type .

1 12. The method of Claim 1, wherein
2 the first graphical element is included in a page of one or more graphical elements
3 associated with requesting the service from the application; and

4 the plurality of predetermined event types includes an exit-page event type and an
5 enter-page event type.

1 13. The method of Claim 12, said step of determining whether the action is associated
2 with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to
4 pressing an enter key on a graphical element associated with a reference to a
5 different page; and
6 if the first action does correspond to pressing the enter key on the graphical element
7 associated with the reference to the different page, then the first action is
8 associated with the exit-page event type and the enter-page event type.

- 1 14. The method of Claim 12, said step of determining whether the action is associated
- 2 with an event type further comprising:
 - 3 determining whether the first message indicates the first action corresponds to
 - 4 pressing an enter key on a last graphical element on the page; and
 - 5 if the first action does correspond to pressing the enter key on the last graphical
 - 6 element on the page, then the first action is associated with the exit-page even
 - 7 type.

1 15. The method of Claim 1, wherein

2 the first graphical element is included in a page of one or more graphical elements

3 associated with requesting the service from the application; and

4 the plurality of predetermined event types includes an special-key-pressed event type.

1 16. The method of Claim 15, said step of determining whether the action is associated
2 with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to one of
4 pressing a page-back key, pressing a page-forward key and pressing a menu
5 key; and

6 if the first action does correspond to one of pressing a page-back key, pressing a page-
7 forward key and pressing a menu key, then the first action is associated with
8 the special-key-pressed event type.

1 17. The method of Claim 1, wherein the plurality of predetermined event types includes
2 an exit-application event type and an enter-application event type.

1 18. The method of Claim 17, said step of determining whether the action is associated
2 with an event type further comprising:
3 determining whether the first message indicates the first action corresponds to
4 pressing an enter key on a graphical element associated with a main menu
5 item; and
6 if the first action does correspond to pressing the enter key on the graphical element
7 associated with the main menu item, then the first action is associated with the
8 enter-application event type.

1 19. The method of Claim 17, wherein:

2 the first graphical element is included in a page of one or more graphical elements
3 associated with requesting the service from the application;
4 the application includes one or more pages; and
5 said step of determining whether the action is associated with an event type further
6 comprising
7 determining whether the first message indicates the first action corresponds to
8 pressing an enter key on a last graphical element on a page without a
9 reference to a different page; and
10 if the first action does correspond to pressing the enter key on the last
11 graphical element on the page without the reference to the different
12 page, then the first action is associated with the exit-application event
13 type.

1 20. The method of Claim 2, further comprising, if the particular event handling method
2 determines no more pages of one or more graphical elements are to be provided by the
3 application, then receiving third data indicating a particular exception in a particular event
4 exception handling method of the mobile interactions server for exiting the application.

1 21. The method of Claim 2, further comprising, if the particular event handling method
2 determines a request is to be made to a network resource having a particular URL address,
3 then receiving third data indicating a particular exception and the URL address in a particular
4 event exception handling method of the mobile interactions server for sending the request to
5 the network resource.

1 22. The method of Claim 2, further comprising, if the particular event handling method
2 determines not to complete processing of the particular event, then receiving third data
3 indicating a particular exception in a particular event exception handling method of the
4 mobile interactions server for skipping all remaining event handling methods for the
5 particular event.

1 23. The method of Claim 2, further comprising, if the particular event handling method
2 determines not to complete processing of the particular event, then receiving third data
3 indicating a particular exception in a particular event exception handling method of the
4 mobile interactions server for invoking all remaining event handling methods of the
5 application for the particular event.

1 24. The method of Claim 2, further comprising, if the particular event handling method
2 determines not to complete processing of the particular event, then receiving third data
3 indicating a particular exception in a particular event exception handling method of the
4 mobile interactions server for invoking only the event handling methods of the mobile
5 interactions server for the particular event.

1 25. The method of Claim 2, wherein the particular event handling method inherits from a
2 first event handling interface provided by the mobile interactions server, the first event
3 handling interface defining the plurality of event types.

1 26. The method of Claim 25, wherein the first event handling interface inherits from a
2 JAVA event handling interface.

1 27. A method of interacting with a client process on a mobile device connected to a
2 network over a wireless link, the method comprising the steps of:
3 sending from an application to a mobile interactions server first data describing a first
4 graphical element for display on the mobile device and one or more event
5 handling methods of the application associated with the first graphical
6 element;
7 receiving at a particular event handling method of the plurality of event handling
8 methods second data describing an event having a particular event type of a
9 plurality of predetermined event types in response to an action by a user of the
10 mobile device; and
11 providing a service for the client process in response to receiving the second data,
12 wherein
13 the particular event handling method is associated with the particular event
14 type, and
15 the action is determined by the mobile interactions server to be associated with
16 the particular event type.

1 28. The method of Claim 27, the method further comprising the steps of:
2 determining whether to invoke an exception handling method of the mobile
3 interactions server; and

4 if it is determined to invoke the exception handling method, then sending third data
5 describing a particular exception to the exception handling method.

1 29. The method of Claim 28, wherein the particular exception is associated with no more
2 pages of one or more graphical elements for the client process.

1 30. The method of Claim 28, wherein the particular exception is associated with
2 redirecting the mobile interactions server to a network resource having a particular URL
3 address.

1 31. The method of Claim 28, wherein the particular exception is associated with aborting
2 all event handlers for the event.

1 32. The method of Claim 28, wherein the particular exception is associated with
2 interrupting the particular event handler for the event.

1 33. The method of Claim 28, wherein the particular exception is associated with invoking
2 only an event handler of the mobile interactions server for the event.

1 34. A computer-readable medium carrying instructions for interacting with a client
2 process on a mobile device connected to a network over a wireless link, the computer-
3 readable medium comprising instructions for causing one or more processors to perform the
4 steps of:

5 receiving over the network a first message from the client process indicating a first
6 action by a user of the mobile device, the first action related to a first graphical
7 element displayed on the device for requesting a service from an application;
8 based on the first message, determining whether the action is associated with an event
9 type of a plurality of predetermined event types;
10 if it is determined the action is not associated with the event type, then, without
11 invoking any method of the application,
12 generating first data describing any change in the first graphical element; and
13 passing the first data to the client process for changing the display of the first
14 graphical element.

1 35. The computer-readable medium of Claim 34, the instructions further causing the one
2 or more processors to perform the step of, if it is determined the action is associated with the
3 event type, then:

4 generating second data describing a particular event of the event type;
5 invoking a particular event handling method of the application to provide the service,
6 the particular event handling method defined for the event type; and
7 passing the second data to the event handling method.

1 36. The computer-readable medium of Claim 34, the instructions further causing the one
2 or more processors to perform the step of, before said step of receiving the first message,:
3 receiving second data from the application describing the first graphical element and
4 indicating one or more event handling methods associated with the first
5 graphical element; and

6 passing the second data to the client process for displaying the first graphical element.

1 37. The computer-readable medium of Claim 36, wherein each of the one or more event
2 handling methods is associated with one event type of the plurality of predetermined event
3 types.

1 38. The computer-readable medium of Claim 35, wherein the particular event handling
2 method is associated with one event type of the plurality of predetermined event types.

1 39. The computer-readable medium of Claim 38, wherein a name of the particular event
2 handling method indicates the one event type with which it is associated.

1 40. The computer-readable medium of Claim 35, wherein the particular event handling
2 method is associated with the first graphical element.

1 41. The computer-readable medium of Claim 34, wherein the plurality of predetermined
2 events types does not include an event type associated with the user of the mobile device
3 pressing a character key.

1 42. The computer-readable medium of Claim 34, wherein the plurality of predetermined
2 event types includes an exit-graphical-element event type and an enter-graphical-element
3 event type.

1 43. The computer-readable medium of Claim 42, said step of determining whether the
2 action is associated with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to one of
4 moving a cursor from the first graphical element and pressing an enter key;
5 and

6 if the first action does correspond to one of moving the cursor from the first graphical
7 element and pressing the enter key, then the first action is associated with the
8 exit-graphical-element event type.

1 44. The computer-readable medium of Claim 42, said step of determining whether the
2 action is associated with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to moving
4 a cursor onto the first graphical element; and
5 if the first action does correspond to moving the cursor onto the first graphical
6 element, then the first action is associated with the enter-graphical-element
7 event type .

1 45. The computer-readable medium of Claim 34, wherein
2 the first graphical element is included in a page of one or more graphical elements
3 associated with requesting the service from the application; and
4 the plurality of predetermined event types includes an exit-page event type and an
5 enter-page event type.

1 46. The computer-readable medium of Claim 45, said step of determining whether the
2 action is associated with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to
4 pressing an enter key on a graphical element associated with a reference to a
5 different page; and

6 if the first action does correspond to pressing the enter key on the graphical element
7 associated with the reference to the different page, then the first action is
8 associated with the exit-page event type and the enter-page event type.

1 47. The computer-readable medium of Claim 45, said step of determining whether the
2 action is associated with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to
4 pressing an enter key on a last graphical element on the page; and
5 if the first action does correspond to pressing the enter key on the last graphical
6 element on the page, then the first action is associated with the exit-page event
7 type.

1 48. The computer-readable medium of Claim 34, wherein
2 the first graphical element is included in a page of one or more graphical elements
3 associated with requesting the service from the application; and
4 the plurality of predetermined event types includes an special-key-pressed event type.

1 49. The computer-readable medium of Claim 48, said step of determining whether the
2 action is associated with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to one of
4 pressing a page-back key, pressing a page-forward key and pressing a menu
5 key; and

6 if the first action does correspond to one of pressing a page-back key, pressing a page-
7 forward key and pressing a menu key, then the first action is associated with
8 the special-key-pressed event type.

1 50. The computer-readable medium of Claim 34, wherein the plurality of predetermined
2 event types includes an exit-application event type and an enter-application event type.

1 51. The computer-readable medium of Claim 50, said step of determining whether the
2 action is associated with an event type further comprising:

3 determining whether the first message indicates the first action corresponds to
4 pressing an enter key on a graphical element associated with a main menu
5 item; and

6 if the first action does correspond to pressing the enter key on the graphical element
7 associated with the main menu item, then the first action is associated with the
8 enter-application event type.

1 52. The computer-readable medium of Claim 50, wherein:

2 the first graphical element is included in a page of one or more graphical elements
3 associated with requesting the service from the application;
4 the application includes one or more pages; and
5 said step of determining whether the action is associated with an event type further
6 comprises
7 determining whether the first message indicates the first action corresponds to
8 pressing an enter key on a last graphical element on a page without a
9 reference to a different page; and
10 if the first action does correspond to pressing the enter key on the last
11 graphical element on the page without the reference to the different
12 page, then the first action is associated with the exit-application event
13 type.

1 53. The computer-readable medium of Claim 35, the instructions further causing the one
2 or more processors to perform the step of, if the particular event handling method determines
3 no more pages of one or more graphical elements are to be provided by the application, then
4 receiving third data indicating a particular exception in a particular event exception handling
5 method of the mobile interactions server for exiting the application.

1 54. The computer-readable medium of Claim 35, the instructions further causing the one
2 or more processors to perform the step of, if the particular event handling method determines
3 a request is to be made to a network resource having a particular URL address, then receiving
4 third data indicating a particular exception and the URL address in a particular event

5 exception handling method of the mobile interactions server for sending the request to the
6 network resource.

1 55. The computer-readable medium of Claim 35, the instructions further causing the one
2 or more processors to perform the step of, if the particular event handling method determines
3 not to complete processing of the particular event, then receiving third data indicating a
4 particular exception in a particular event exception handling method of the mobile
5 interactions server for skipping all remaining event handling methods for the particular event.

1 56. The computer-readable medium of Claim 35, the instructions further causing the one
2 or more processors to perform the step of, if the particular event handling method determines
3 not to complete processing of the particular event, then receiving third data indicating a
4 particular exception in a particular event exception handling method of the mobile
5 interactions server for invoking all remaining event handling methods of the application for
6 the particular event.

1 57. The computer-readable medium of Claim 35, the instructions further causing the one
2 or more processors to perform the step of, if the particular event handling method determines
3 not to complete processing of the particular event, then receiving third data indicating a
4 particular exception in a particular event exception handling method of the mobile
5 interactions server for invoking only the event handling methods of the mobile interactions
6 server for the particular event.

1 58. The computer-readable medium of Claim 35, wherein the particular event handling
2 method inherits from a first event handling interface provided by the mobile interactions
3 server, the first event handling interface defining the plurality of event types.

1 59. The computer-readable medium of Claim 58, wherein the first event handling
2 interface inherits from a JAVA event handling interface.

1 60. A computer-readable medium carrying instructions for interacting with a client
2 process on a mobile device connected to a network over a wireless link, the computer-
3 readable medium comprising instructions for causing one or more processors to perform the
4 steps of:

5 sending to a mobile interactions server first data describing a first graphical element
6 for display on the mobile device and one or more event handling methods of
7 the application associated with the first graphical element;
8 receiving at a particular event handling method of the plurality of event handling
9 methods second data describing an event having a particular event type of a
10 plurality of predetermined event types in response to an action by a user of the
11 mobile device; and
12 providing a service for the client process in response to receiving the second data,
13 wherein
14 the particular event handling method is associated with the particular event
15 type, and

16 the action is determined by the mobile interactions server to be associated with
17 the particular event type.

1 61. The computer-readable medium of Claim 60, the instructions further causing the one
2 or more processors to perform the steps of:

3 determining whether to invoke an exception handling method of the mobile
4 interactions server; and

5 if it is determined to invoke the exception handling method, then sending third data
6 describing a particular exception to the exception handling method.

1 62. The computer-readable medium of Claim 61, wherein the particular exception is
2 associated with no more pages of one or more graphical elements for the client process.

1 63. The computer-readable medium of Claim 61, wherein the particular exception is
2 associated with redirecting the mobile interactions server to a network resource having a
3 particular URL address.

1 64. The computer-readable medium of Claim 61, wherein the particular exception is
2 associated with aborting all event handlers for the event.

1 65. The computer-readable medium of Claim 61, wherein the particular exception is
2 associated with interrupting the particular event handler for the event

1 66. The computer-readable medium of Claim 61, wherein the particular exception is
2 associated with invoking only an event handler of the mobile interactions server for the event.

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PATENT & TRADEMARK OFFICE

FEE TRANSMITTAL for FY 2005

Patent fees are subject to annual revision.
Small Entity payments must be supported by a small entity statement,
otherwise large entity fees must be paid. See Forms PTO/SB/09-12.
See 37 C.F.R. §§ 1.27 AND 1.28

TOTAL AMOUNT OF PAYMENT (\$ 500.00)

Complete if Known

Application Number	09/872,978
Filing Date	May 31, 2001
First Named Inventor	Jyotirmoy Paul et al.
Examiner Name	Kenny S. LIN
Group/Art Unit	2154
Attorney Docket No.	50277-1608

METHOD OF PAYMENT (check one)

1. Throughout the pendency of this application, please charge any additional fees, including any required extension of time fees, and credit all overpayments to deposit account 50-1302. A duplicate of this sheet is enclosed.

Deposit Account Number 50-1302

Deposit Account Name Hickman Palermo Truong & Becker, LLP

2. Payment Enclosed:

Check Money Order Other

3. Applicant(s) is entitled to small entity status.

See 37 CFR 1.27.

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge – late filing fee or oath	
1052	50	2052	25	Surcharge – late provisional filing fee or cover sheet	
1251	120	2251	60	Extension for reply within first month	
1252	450	2252	225	Extension for reply within second month	
1253	1,020	2253	510	Extension for reply within third month	
1254	1,590	2254	795	Extension for reply within fourth month	
1255	2,160	2255	1,080	Extension for reply within fifth month	
1401	500	2401	250	Notice of Appeal	
1402	500	2402	250	Filing a brief in support of an appeal	500.00
1452	500	2452	250	Petition to revive – unavoidable	
1453	1,500	2453	750	Petition to revive – unintentional	
1501	1,400	2501	700	Utility issue fee (or reissue)	
1502	800	2502	400	Design issue fee	
1504	300	2504	300	Publication Fee	
1462	400	1462	400	Petitions Director not specifically provided for Group I	
1463	200	1463	200	Petitions Director not specifically provided for Group II	
1464	130	1464	130	Petitions Director not specifically provided for Group III	
1806	180	1806	180	Submission of information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	790	2809	395	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR § 1.129(b))	
Other fee (specify) _____					
Other fee (specify) _____					

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
1011	300	2011	150	Utility filing fee	
1111	500	2111	250	Utility Search fee	
1311	200	2311	100	Utility Examination fee	
1081	250	2081	125	Utility Application Size Fee	
1005	200	2005	100	Provisional Application Fee	
1085	250	20835	125	Provisional Application Size Fee	
SUBTOTAL (1) (\$ 0.00)					

2. EXTRA CLAIM FEES

Highest Paid Claims	-66=	Extra Claims	Fee from Below	Fee Paid
Total Claims 66	-66=	0	x 50.00	= 0.00
Independent Claims 4	- 4=	0	x 200.00	= 0.00
Multiple Dependent				

**or number previously paid, if greater; For Reissues, see below

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description
1202	50	2202	25	Claims in excess of 20
1201	200	2201	100	Independent claims in excess of 3
1203	360	2203	180	Multiple dependent claim, if not paid
1204	200	2204	100	**Reissue independent claims over original patent
1205	50	2205	25	**Reissue claims in excess of 20 and over original patent
SUBTOTAL (2) (\$ 0.00)				

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) (\$ 500.00)

SUBMITTED BY

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